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Terms	Documents
L1 and (DSM 13329)	0

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IBM Technical Disclosure Bulletins

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L7

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DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=ADJ

<u>L7</u>	L1 and (DSM 13329)	0	<u>L7</u>
<u>L6</u>	L1 with (DSM 13329)	0	<u>L6</u>
<u>L5</u>	L1 with (ATCC 832)	0	<u>L5</u>
<u>L4</u>	L1 with (fungus or yeast)	4	<u>L4</u>
<u>L3</u>	L1 With paenibacillus	3	<u>L3</u>
<u>L2</u>	L1 With Bacillus	3	<u>L2</u>
<u>L1</u>	xyloglucanase	84	<u>L1</u>

END OF SEARCH HISTORY

**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 3 of 3 returned.**☐ 1. Document ID: US 20020076706 A1

L3: Entry 1 of 3

File: PGPB

Jun 20, 2002

PGPUB-DOCUMENT-NUMBER: 20020076706

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020076706 A1

TITLE: Signal sequence trapping

PUBLICATION-DATE: June 20, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Duffner, Fiona	Kobenhavn		DK	
Wiltng, Reinhard	Farum		DK	
Schnorr, Kirk	Holte		DK	

US-CL-CURRENT: [435/6](#); [536/23.5](#), [536/23.7](#)

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>	<a href="#">Claims</a>	<a href="#">KWC</a>	<a href="#">Draw Desc</a>	<a href="#">Image</a>
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☐ 2. Document ID: AU 200137247 A WO 200164853 A1

L3: Entry 2 of 3

File: DWPI

Sep 12, 2001

DERWENT-ACC-NO: 2001-565502

DERWENT-WEEK: 200204

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TITLE: Novel xyloglucanase enzyme for use in textile, detergent and cellulose fiber processing industries comprises family 5 of glycosyl hydrolases and is derived from strains of Paenibacillus

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>	<a href="#">Claims</a>	<a href="#">KWC</a>	<a href="#">Draw Desc</a>	<a href="#">Image</a>
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☐ 3. Document ID: AU 200133623 A WO 200162903 A1

L3: Entry 3 of 3

File: DWPI

Sep 3, 2001

DERWENT-ACC-NO: 2001-522819

DERWENT-WEEK: 200202

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TITLE: New xyloglucanase enzyme belonging to glycosyl hydrolases family, useful for detergent compositions, and textile or cellulose fiber processing industries

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>	<a href="#">Claims</a>	<a href="#">KWC</a>	<a href="#">Draw Desc</a>	<a href="#">Image</a>
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Terms	Documents
L1 With paenibacillus	3

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Derwent World Patents Index  
IBM Technical Disclosure Bulletins

Term:

L1 with (fungus or yeast)

Display:

50

Documents in Display Format:

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**Search History**DATE: Thursday, August 29, 2002 [Printable Copy](#) [Create Case](#)

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<u>L4</u>	L1 with (fungus or yeast)	4	<u>L4</u>
<u>L3</u>	L1 With paenibacillus	3	<u>L3</u>
<u>L2</u>	L1 With Bacillus	3	<u>L2</u>
<u>L1</u>	xyloglucanase	84	<u>L1</u>

END OF SEARCH HISTORY

=> d his

(FILE 'HOME' ENTERED AT 11:10:55 ON 29 AUG 2002)

INDEX 'ADISALERTS, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, AQUASCI,  
BIOBUSINESS, BIOCOMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO,  
CABA,  
CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DDFB,  
DDFU, DGENE, DRUGB, DRUGLAUNCH, DRUGMONOG2, ...' ENTERED AT 11:11:02 ON  
29 AUG 2002

SEA XYLOGLUCANASE

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9 FILE AGRICOLA  
1 FILE BIOBUSINESS  
22 FILE BIOSIS  
11 FILE BIOTECHABS  
11 FILE BIOTECHDS  
3 FILE BIOTECHNO  
11 FILE CABA  
55 FILE CAPLUS  
3 FILE CEABA-VTB  
2 FILE CONFSCI  
172 FILE DGENE  
3 FILE EMBASE  
7 FILE ESBIODASE  
4 FILE FROSTI  
7 FILE FSTA  
5 FILE JICST-EPLUS  
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6 FILE MEDLINE  
8 FILE PASCAL  
1 FILE PROMT  
20 FILE SCISEARCH  
3 FILE TOXCENTER  
62 FILE USPATFULL  
23 FILE WPIDS  
23 FILE WPINDEX

L1 QUE XYLOGLUCANASE

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FILE 'CAPLUS, WPIDS, BIOSIS, SCISEARCH' ENTERED AT 11:12:10 ON 29 AUG

2002

L2 2 S L1 AND (FAMILY 44)  
L3 47 S L1 AND (BACILLUS OR FUNGUS OR YEAST)  
L4 32 DUP REM L3 (15 DUPLICATES REMOVED)  
L5 1 S L4 AND (FAMILY 44)

=> d l4 ibib ab 22-332

L4 ANSWER 22 OF 32 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:48789 CAPLUS

DOCUMENT NUMBER: 130:106938

TITLE: Cloning and characterization of endo-.beta.-1,4-  
glucanase from Saccharothrix australiensis and its

use

in cleaning compositions

INVENTOR(S): Bjornvad, Mads Eskelund; Hatakeyama, Mariko;  
Schulein,

PATENT ASSIGNEE(S):  
SOURCE:

Martin; Nielsen, Jack Bech  
Novo Nordisk A/S, Den.  
PCT Int. Appl., 82 pp.  
CODEN: PIXXD2

DOCUMENT TYPE:

Patent

LANGUAGE:

English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9901543	A1	19990114	WO 1998-DK286	19980630
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9879082	A1	19990125	AU 1998-79082	19980630
EP 1002059	A1	20000524	EP 1998-929243	19980630
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE, PT, IE, FI				
US 6207436	B1	20010327	US 1998-109841	19980702
PRIORITY APPLN. INFO.:				
			DK 1997-812	A 19970704
			DK 1997-846	A 19970711
			US 1997-53506P	P 19970723
			WO 1998-DK286	W 19980630
AB An enzyme prep. comprising an enzyme having endo-.beta.-1,4-glucanase activity is provided from or endogeneous to a strain belonging to the genus <i>Saccharothrix</i> such as <i>S. australiensis</i> IFO 14444. The pH optimum of the enzyme was 8.0, and >50% relative activity was obtained between pH 6.5 and 9.0; its <i>K<sub>m</sub></i> , <i>V<sub>max</sub></i> , and <i>dcat</i> for phosphoric-acid swollen cellulose were calcd. An isolated DNA encoding the enzyme or enzyme core (the catalytically active domain of the enzyme) exhibiting endo-.beta.-1,4-glucanase activity is also provided. The expressed endoglucanase is useful in a detergent or fabric softener compn. or in the textile industry for improving the properties of cellulosic fibers or fabric or for providing a stone-washed look of denim. Tensile strength loss is induced by treating fabric with the endo-.beta.-1,4-glucanase from <i>S. australiensis</i> .				
REFERENCE COUNT:		2	THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE	
FORMAT				
L4 ANSWER 23 OF 32 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 11				
ACCESSION NUMBER:		1999:500672 CAPLUS		
DOCUMENT NUMBER:		132:20934		
TITLE:		Effect of xyloglucan and <b>xyloglucanase</b> activity on the development of the arbuscular mycorrhizal <i>Glomus mosseae</i>		
AUTHOR(S):		Garcia-Garrido, Jose M.; Rejon-Palomares, Antonia; Ocampo, Juan A.; Garcia-Romera, Inmaculada		
CORPORATE SOURCE:		Departamento de Microbiologia del Suelo y Sistemas Simbioticos, Estacion Experimental del Zaidin, CSIC, Granada, E-18008, Spain		
SOURCE:		Mycological Research (1999), 103(7), 882-886		
		CODEN: MYCRER; ISSN: 0953-7562		
PUBLISHER:		Cambridge University Press		
DOCUMENT TYPE:		Journal		
LANGUAGE:		English		
AB The effect of xyloglucan on spore germination, hyphal length and				

mycorrhizal colonization of alfalfa plants was studied. The presence of high concns. of xyloglucan in the rooting medium inhibited mycorrhizal colonization in plants inoculated with *Glomus mosseae*. Intermediate xyloglucan concns. had no effect on arbuscular mycorrhizal (AM) colonization, but a low concn. increased mycorrhization of host plants. The effects of these doses on spore germination and hyphal length of *G. mosseae* were similar to those obsd. for mycorrhizal colonization. Prodn. of **xyloglucanase** was assayed during colonization by the AM **fungus** *G. mosseae* in lettuce and onion. Endoxyloglucanase activity peaked 15 d after inoculation, whereas exoxyloglucanase activity peaked at 30 and 50 d. Exts. from external mycelia of *G. mosseae* showed endo- and exoxyloglucanase activities. Some of the endoxyloglucanase activities detected in AM colonized plant roots may be derived from the

AM

**fungus**, as endoxyloglucanase proteins found in the external mycelia of *G. mosseae* and in mycorrhizal root exts. showed similar electrophoretic mobility. These results suggest that **xyloglucanase** is involved in the process of colonization of plants by *G. mosseae*.

REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE

FORMAT

L4 ANSWER 24 OF 32 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:39203 CAPLUS

DOCUMENT NUMBER: 130:206578

TITLE: A xyloglucan-specific endo-.beta.-1,4-glucanase from *Aspergillus aculeatus*: expression cloning in **yeast**, purification and characterization of the recombinant enzyme

AUTHOR(S): Pauly, Markus; Andersen, Lene N.; Kauppinen, Sakari; Kofod, Lene V.; York, William S.; Albersheim, Peter; Darvill, Alan

CORPORATE SOURCE: Complex Carbohydrate Research Center and Department of

Biochemistry and Molecular Biology, University of Georgia, GA, 30602-4712, USA

SOURCE: Glycobiology (1999), 9(1), 93-100

CODEN: GLYCE3; ISSN: 0959-6658

PUBLISHER: Oxford University Press

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A full-length c-DNA encoding a xyloglucan-specific endo-.beta.-1,4-glucanase (XEG) has been isolated from the filamentous **fungus** *Aspergillus aculeatus* by expression cloning in **yeast**. The colonies expressing functional XEG were identified on agar plates contg. azurine-dyed crosslinked xyloglucan. The cDNA encoding XEG was isolated, sequenced, cloned into an *Aspergillus* expression vector, and transformed into *Aspergillus oryzae* for heterologous expression. The recombinant enzyme was purified to apparent homogeneity by anion-exchange and gel permeation chromatog. The recombinant XEG has a mol. mass of 23,600, an isoelec. point of 3.4, and is optimally stable at a pH of 3.4 and temp. below 30.degree.. The enzyme hydrolyzes structurally diverse xyloglucans from various sources, but hydrolyzes no other cell wall component and can therefore be considered a xyloglucan-specific endo-.beta.-1,4-glucanohydrolase. XEG hydrolyzes its substrates with retention of the anomeric configuration. The Km of the recombinant enzyme is 3.6 mg/mL, and its specific activity is 260 .mu.mol/min per mg protein. The enzyme was tested for its ability to solubilize xyloglucan oligosaccharides from plant cell walls. It was shown that treatment of plant cell walls with XEG yields only xyloglucan oligosaccharides, indicating that this enzyme can be a powerful tool in the structural elucidation of xyloglucans.

REFERENCE COUNT: 55 THERE ARE 55 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE

FORMAT

L4 ANSWER 25 OF 32 PLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1998:608725 CAPLUS  
 DOCUMENT NUMBER: 129:215781  
 TITLE: Method for producing cellulose derivatives  
 INVENTOR(S): Noguchi, Yoshitaka; Kamachi, Motoaki  
 PATENT ASSIGNEE(S): Novo Nordisk A/S, Den.  
 SOURCE: PCT Int. Appl., 16 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9838328	A1	19980903	WO 1997-DK89	19970228
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9718717	A1	19980918	AU 1997-18717	19970228
EP 981639	A1	20000301	EP 1997-905002	19970228
R: SE, PT, FI				
US 2002084047	A1	20020704	US 1999-371343	19990810
PRIORITY APPLN. INFO.:			WO 1997-DK89	A 19970228
AB Pulp is treated with a hemicellulase, e.g. a xylanase such as that derived from <i>Bacillus</i> sp. SD902 prior to being chem. modified. This results in excellent cellulose derivs. that could not be obtained by conventional methods. Specifically, the cellulose derivs. produced by this method have improved filterability and increased water soly. In addn., according to this method, the formation of microgel is minimized, and the distribution of the substituents in the cellulose derivs. through the intramol. substitution in the method is made more uniform.				

L4 ANSWER 26 OF 32 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
 ACCESSION NUMBER: 1997:225440 BIOSIS  
 DOCUMENT NUMBER: PREV199799517156  
 TITLE: Fungal and plant **xyloglucanases** may act in  
 concert during liquefaction of apples.  
 AUTHOR(S): Vincken, Jean-Paul; Van Den Broek, Lambertus A. M.; Van  
 Der  
 Lei, David D.; Beldman, Gerrit; Voragen, Alphons G. J. (1)  
 CORPORATE SOURCE: (1) Wageningen Agric. Univ., Dep. Food Sci., PO Box 8129,  
 6700 WV Wageningen Netherlands  
 SOURCE: Journal of the Science of Food and Agriculture, (1997)  
 Vol.  
 73, No. 4, pp. 407-416.  
 ISSN: 0022-5142.  
 DOCUMENT TYPE: Article  
 LANGUAGE: English  
 AB Efficient enzymic degradation of cellulose in isolated cell wall material  
 of apples requires prior removal of its xyloglucan coating. In this  
 study,  
 raw and blanched apple fruit tissues were treated with pectin lyase and  
 various (combinations of purified) cellulases. These experiments  
 confirmed  
 that **xyloglucanase** activity is important for cellulose  
 degradation in apple fruit tissue. Apart from this, it was observed that  
 raw apple material disintegrated faster than blanched. Typically, the  
 release of xyloglucan oligosaccharide XXXG from raw apple material was



slower (relative to XXFG) when compared to that from blanched material. The endogenous enzyme, xyloglucan endotransglycosylase (XET), is probably responsible for these phenomena. It is hypothesized that XET activity accelerates disintegration of apple tissue once its depolymerising mode is triggered by xyloglucan oligosaccharides released by exogenous endoglucanases.

L4 ANSWER 27 OF 32 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
ACCESSION NUMBER: 1997:171283 BIOSIS  
DOCUMENT NUMBER: PREV199799477886  
TITLE: Substrate specificity of endoglucanases: What determines **xyloglucanase** activity.  
AUTHOR(S): Vincken, Jean-Paul; Beldman, Gerrit; Voragen, Alphons G. J.  
(1)  
CORPORATE SOURCE: (1) Wageningen Agric. Univ., Dep. Food Sci., P.O. Box 8129,  
6700 EV Wageningen Netherlands  
SOURCE: Carbohydrate Research, (1997) Vol. 298, No. 4, pp. 299-310.

ISSN: 0008-6215.  
DOCUMENT TYPE: Article  
LANGUAGE: English

AB Endoglucanases from *Trichoderma viride* differ in their activity and mode of action towards xyloglucans. In order to explain the basis for their different behavior, the number of substrate-binding sites of three endoglucanases (endoI, endoIV, and endoV) were determined using bond cleavage frequencies of both normal and reduced cellodextrins and k-0/K-m.

EndoIV differed from other endoglucanases described so far, in having at least nine putative binding sites. The specificities of the three endoglucanases towards various xyloglucans derived from apple fruit and potato were determined. Also, the release of oligosaccharides from these substrates in time was monitored. It was concluded that the endoglucanases

prefer to bind unbranched glucosyl residues. Because most xyloglucans are composed of XXXG-type of building units, distant subsites are needed to bind xyloglucan. Having at least nine substrate-binding sites, endoIV seems to be well equipped to degrade xyloglucans which was confirmed by its high **xyloglucanase** activity.

L4 ANSWER 28 OF 32 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
ACCESSION NUMBER: 1997:380701 BIOSIS  
DOCUMENT NUMBER: PREV199799679904  
TITLE: Structural analysis of the Solanaceae xyloglucans using **xyloglucanase** hydrolysis method.  
AUTHOR(S): Konishi, Teruko; Mitsuishi, Yasushi; Kato, Yoji  
CORPORATE SOURCE: Fac. Educ., Hirosaki Univ., Hirosaki 036 Japan  
SOURCE: Plant Physiology (Rockville), (1997) Vol. 114, No. 3 SUPPL., pp. 83.  
Meeting Info.: PLANT BIOLOGY '97: 1997 Annual Meetings of the American Society of Plant Physiologists and the Canadian Society of Plant Physiologists, Japanese Society of Plant Physiologists and the Australian Society of Plant Physiologists Vancouver, British Columbia, Canada August 2-6, 1997  
ISSN: 0032-0889.  
DOCUMENT TYPE: Conference; Abstract; Conference  
LANGUAGE: English

L4 ANSWER 29 OF 32 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
ACCESSION NUMBER: 1997:380702 BIOSIS  
DOCUMENT NUMBER: PREV199799679905  
TITLE: Compositional analysis of the oligosaccharide units of xyloglucan from apple fruit cell walls.

AUTHOR(S): Saito, Sachiko (1); Konishi, Teruko; Mitsuishi, Yasushi; Arimura, Osamu; Kato, Yoji  
CORPORATE SOURCE: (1) Fac. Educ., Hirosaki Univ., Hirosaki 036 Japan  
SOURCE: Plant Physiology (Rockville), (1997) Vol. 114, No. 3 SUPPL., pp. 83.  
Meeting Info.: PLANT BIOLOGY '97: 1997 Annual Meetings of the American Society of Plant Physiologists and the Canadian Society of Plant Physiologists, Japanese Society of Plant Physiologists and the Australian Society of Plant Physiologists Vancouver, British Columbia, Canada August 2-6, 1997  
ISSN: 0032-0889.  
DOCUMENT TYPE: Conference; Abstract; Conference  
LANGUAGE: English

L4 ANSWER 30 OF 32 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 12  
ACCESSION NUMBER: 1997:137755 CAPLUS  
DOCUMENT NUMBER: 126:197414  
TITLE: Presence of xyloglucan-hydrolyzing glucanases (**xyloglucanases**) in arbuscular mycorrhizal symbiosis  
AUTHOR(S): Rejon-Palomares, A.; Garcia-Garrido, J.M.; Ocampo, J.A.; Garcia-Romera, I.  
CORPORATE SOURCE: Dpto. Microbiologia del Suelo y Sistemas Sinbioticos, Estacion Experimental del Zaidin, C.S.I.C., Granada, 18008, Spain  
SOURCE: Symbiosis (1996), 21(3), 249-261  
CODEN: SYMBER; ISSN: 0334-5114  
PUBLISHER: Balaban Publishers  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB We studied the prodn. of xyloglucan-hydrolyzing glucanases (**xyloglucanases**) in roots of lettuce (*Lactuca sativa*), onion (*Allium cepa*) and soybean (*Glycine max*) colonized by the arbuscular mycorrhizal (AM) **fungus** *Glomus mosseae*. Endoxyloglucanase activity in mycorrhizal roots extd. with 100 mM Tris-HCl (pH 7) was higher than in nonmycorrhizal root exts. There were no significant differences in endoxyloglucanase activity between mycorrhizal and nonmycorrhizal roots when they were extd. with 200 mM Na<sub>2</sub>PO<sub>4</sub> (pH 7.2), 100 mM NaCl, 100 mM potassium-phosphate buffer (pH 7.8) or 25 mM MES (Na) (pH 6.6). From the results obtained the most suitable extn. buffer for endoxyloglucanase activity in lettuce plants was 100 mM Tris-HCl (pH 7). Endoxyloglucanase activity was greatest when the reaction was carried out at pH 5 or 8, and activity declined at pH 3, 4, 6, 7 and 9. Maximum endoxyloglucanase activity was obsd. in a range of temps. between 37.degree.C and 50.degree.C. Tris exts. of mycorrhizal plants showed more endo- and exoxyloglucanase activity than nonmycorrhizal plants when nasturtium or tamarind xyloglucan was used as the substrate. Exts. from spores and external mycelia of *G. mosseae* also showed endo- and exoxyloglucanase activity. The possible participation of **xyloglucanase** activity in the colonization of plant roots by AM **fungus** is discussed.

L4 ANSWER 31 OF 32 CAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1994:623667 CAPLUS  
DOCUMENT NUMBER: 121:223667  
TITLE: A developmentally-regulated inducible plant promoter from the tomato gene for alcohol dehydrogenase 2 and its uses  
INVENTOR(S): Speirs, James; Brady, Colin John; Lee, Elizabeth; Hinde, Richard; Longhurst, Terrence James  
PATENT ASSIGNEE(S): Commonwealth Scientific and Industrial Research Organization, Australia  
SOURCE: PCT Int. Appl., 27 pp.  
CODEN: PIXXD2

DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9413797	A1	19940623	WO 1993-AU654	19931215
W: AT, AU, BB, BG, BR, BY, CA, CH, CZ, DE, DK, ES, FI, GB, HU, JP, KP, KR, KZ, LK, LU, LV, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SK, UA, US, UZ, VN				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9456887	A1	19940704	AU 1994-56887	19931215
AU 690530	B2	19980430		
EP 674708	A1	19951004	EP 1994-902546	19931215
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
JP 08504326	T2	19960514	JP 1993-513580	19931215
US 5821398	A	19981013	US 1995-448600	19950726
PRIORITY APPLN. INFO.:			AU 1992-6349	19921215
			AU 1993-9059	19930528
			AU 1993-712	19930819
			AU 1993-713	19930819
			WO 1993-AU654	19931215

AB The alc. dehydrogenase (ADH) 2 gene of tomato is cloned and an inducible soft fruit promoter from the gene is described for use in the control of ripening and softening-assocd. phenomena including the formation of volatiles affecting aroma and flavor. The gene may also be used to alter rates of fruit ripening and softening. A cDNA for the enzyme was cloned from a bank from tomato pericarp from fruits developing color by screening with a tomato genomic DNA fragment that cross-hybridized with ADH genes from other plants. A clone that was present in ripe fruit, but not unripe fruit, was obtained. This transcript was also found in anaerobic roots but not in aerobic roots and the gene showed a pattern of expression distinct from that of the ADH1 gene. The cDNA was used to obtain the promoter region from a genomic clone.

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TITLE: The effect of xyloglucans on the degradation of cell-wall-embedded cellulose by the combined action of cellobiohydrolase and endoglucanases from *Trichoderma viride*.  
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AB Two endoglucanases of *Trichoderma viride*, endoI and endoIV, were assayed for their activity toward alkali-extracted apple xyloglucans. EndoIV was shown to have a 60-fold higher activity toward xyloglucan than endoI, whereas carboxymethyl cellulose and crystalline cellulose were better substrates for the latter. The enzymic degradation of cellulose embedded in the complex cell-wall matrix of apple fruit tissue has been studied using cellobiohydrolase (CBH) and these two different endoglucanases. A high-performance liquid chromatographic method (Aminex HPX-22H) was used to monitor the release of cellobiose and oligomeric xyloglucan fragments. Synergistic action between CBH and endoglucanases on cell-wall-embedded

cellulose was, with respect to their optimal ratio, slightly different from that reported for crystalline cellulose. The combination of endoIV and CBH solubilized twice as much cellobiose compared to a combination of endoI and CBH. Apparently, the concomitant removal of the xyloglucan coating from cellulose microfibrils by endoIV is essential for an efficient degradation of cellulose in a complex matrix. Cellulose degradation slightly enhanced the solubilization of xyloglucans. These results indicate optimal degradation of cell-wall-embedded cellulose by a three-enzyme system consisting of an endoglucanase with high affinity toward cellulose (endoI), a **xyloglucanase** (endoIV), and CBH.